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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/772,622	01/30/2001	Xixan Chen	22493.00006	3020
20779	7590	09/10/2004	EXAMINER	
SHAPIRO COHEN P.O. BOX 3440 STATION D OTTAWA, ON K1P6P1 CANADA			MURPHY, RHONDA L	
			ART UNIT	PAPER NUMBER
			2667	
DATE MAILED: 09/10/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/772,622

Applicant(s)

CHEN ET AL.

Examiner

Rhonda L. Murphy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16 and 17 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 18-23 and 25 is/are rejected.
- 7) ☒ Claim(s) 5, 7-15, 24 and 26-34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/25/02.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Oath/Declaration***

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because: All inventor signatures were not provided. Signatures are required from Qiang Shen and Xin Jin.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,2,18 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Hwang (US 6,633,553).

**Regarding claims 1 and 18**, Hwang teaches a system for closed loop power control in a wireless communication network, comprising: a communication unit having: a receiver (col. 5, lines 48-50), the receiver receiving a first signal (Fig. 3, element **300**); a central processing unit (see Fig. 3; the CPU is represented by all elements in Fig.3, excluding element 300), the central processing unit in operative communication with the receiver and executing functions (Fig. 3; col. 5, lines 45-47) including: despreding a received signal (col. 5, lines 48-50); estimating the signal power of the despread received signal

(col. 5, line 54-62); estimating the noise power of the despread received signal (col. 5, lines 63-66), estimating the noise power including: multiplying the despread received signal with an orthogonal noise code to cancel the received signal (col. 5, lines 63-67; col. 6, lines 1-3); and accumulating the multiplied despread received signal over one frame (col. 6, lines 4-7); determining a signal-to-noise ratio of the received signal at least in part by dividing the estimated signal power by the estimated noise power (col. 6, lines 9-12); and determining a reverse power control bit based on the determined signal-to-noise ratio (col. 6, lines 23-34).

**Regarding claims 2 and 21**, Hwang teaches the method according to claim 1, wherein the determined reverse power control bit corresponds to a power down command if the determined signal-to-noise ratio is above a predetermined threshold and wherein the determined reverse power control bit corresponds to a power up command if the determined signal-to-noise ratio is not above the predetermined threshold (col. 6, lines 27-34).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3,4,22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang in view of Shen et al (US 6,717,976).

**Regarding claims 3,4,22 and 23**, Hwang teaches the method according to claim 1, as described above.

Hwang fails to teach a method utilizing a Walsh orthogonal noise code of thirty-two bits.

However, Shen teaches the method wherein the orthogonal noise code is a Walsh code (col. 4, lines 22-26). It is known in the art that a Walsh code can be represented as a thirty-two bit code, with the most significant sixteen bits being ones and the least significant sixteen bits being zeros.

In view of this, having the system of Hwang and then given the teaching of Shen, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Hwang, by utilizing a thirty-two bit Walsh orthogonal noise code, so as to uniquely identify a wireless communication terminal.

6. Claims 6,19,20 and 25 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang in view of Ahn et al. (US 6,539,008).

**Regarding claims 6 and 25**, Hwang teaches the method as set forth in the rejection of claims 2 and 21 as described above.

Hwang fails to teach the method of puncturing the determined reverse power control bit into power control group data corresponding to a power control group.

However, Ahn teaches inserting a reverse power control bit into the power control group data corresponding to a power control group (col. 3, lines 54-61).

In view of this, having the system of Hwang and then given the teaching of Ahn, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Hwang, by puncturing the power control bit into the power control group, so as to reduce bit errors and increase power control accuracy (col. 3, lines 42-47).

**Regarding claims 19 and 20**, Hwang teaches the method as set forth in the rejection of claims 1 and 18.

Hwang fails to teach the central processing unit further performing the function of punching the determined reverse power control bit into a second signal and a communication unit further including a transmitter in operative communication with the central processing unit, the transmitter transmitting the second signal to the device using the wireless communication network.

However, Ahn teaches the central processing unit (Fig. 1, elements **13-16** combined) punching the determined reverse power control bit into a second signal (col. 5, lines 10-14; **two independent signal transmission paths**) and a communication unit (Fig. 1, element 10) including a transmitter (element 17) in operative communication with the central processing unit, the transmitter transmitting the second signal to the device using the wireless communication network (Fig. 1, element **17**; col. 5, lines 10-19).

***Allowable Subject Matter***

7. Claims 16 and 17 are allowed.

**Regarding claim 16**, prior art does not teach multiplying the decimated pilot signal with a complex conjugate of a delayed version of the decimated pilot signal to obtain a multiplied result; accumulating a real component of the multiplied result over one power control group to obtain a Rake finger output; and determining the signal power estimate by coherently combining and averaging the plurality of Rake finger outputs.

**Regarding claim 17**, prior art does not teach taking a squared amplitude over a time of the coherent accumulation to determine a finger signal power level within one-half of a power control group; summing the finger signal power levels for all of the plurality of Rake fingers together over one-half of the power control group to determine an intermediate signal power estimate; and adding the intermediate signal power estimate to a previous signal power estimate.

8. Claims 5,7-17,24 and 26-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Regarding claims 5 and 24**, prior art does not teach, multiplying the decimated pilot signal with a complex conjugate of a delayed version of the decimated pilot signal to obtain a multiplied result; accumulating a real component of the multiplied result over one power control group to obtain a Rake finger output; and determining the signal power estimate by coherently combining and averaging the plurality of Rake finger outputs.

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**Regarding claims 7 and 26**, prior art does not teach buffering control group data corresponding to a plurality of power control groups, the determined reverse power control bit being punctured into each of the power control group data corresponding to the plurality of power control groups; and updating the buffered control group data each time a reverse power control bit is determined.

**Regarding claims 9 and 28**, prior art does not teach using a second quantity of symbols in each power control group to determine a second signal power estimate; determining a second power control bit based on the second signal power estimate; and replacing the punctured first power control bit with the second power control bit if a power control bit position in the  $n+2$  power control group is after the second quantity of symbols in a current reverse link power control group.

**Regarding claims 13 and 32**, prior art does not teach taking a squared amplitude over a time of the coherent accumulation to determine a finger signal power level within one-half of a power control group; summing the finger signal power levels for all of the plurality of Rake fingers together over one-half of the power control group to determine an intermediate signal power estimate; and adding the intermediate signal power estimate to a previous signal power estimate.

**Regarding claims 15 and 34**, prior art does not teach multiplying the decimated pilot signal with a complex conjugate of a delayed version of the decimated pilot signal to obtain a multiplied result; accumulating a real component of the multiplied result over one-half power control group to obtain a finger signal power level; summing the finger



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signal power levels for all of the plurality of Rake fingers together over one-half of the power control group to determine an intermediate signal power estimate; and adding the intermediate signal power estimate to a previous signal power estimate.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda L Murphy whose telephone number is (571) 272-3185. The examiner can normally be reached on Monday - Friday 8:00 - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (703) 305-4798. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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RICKY NGO  
PRIMARY EXAMINER